

STRENGTH THROUGH INDUSTRY & TECHNOLOGY

2002 Tactical Wheeled Vehicles Conference

Monterey, California

Tactical Wheeled Vehicles: Project Management in Transition



Presented by:

Brigadier General Roger A. Nadeau

Program Executive Officer

PEO Combat Support & Combat Service Support

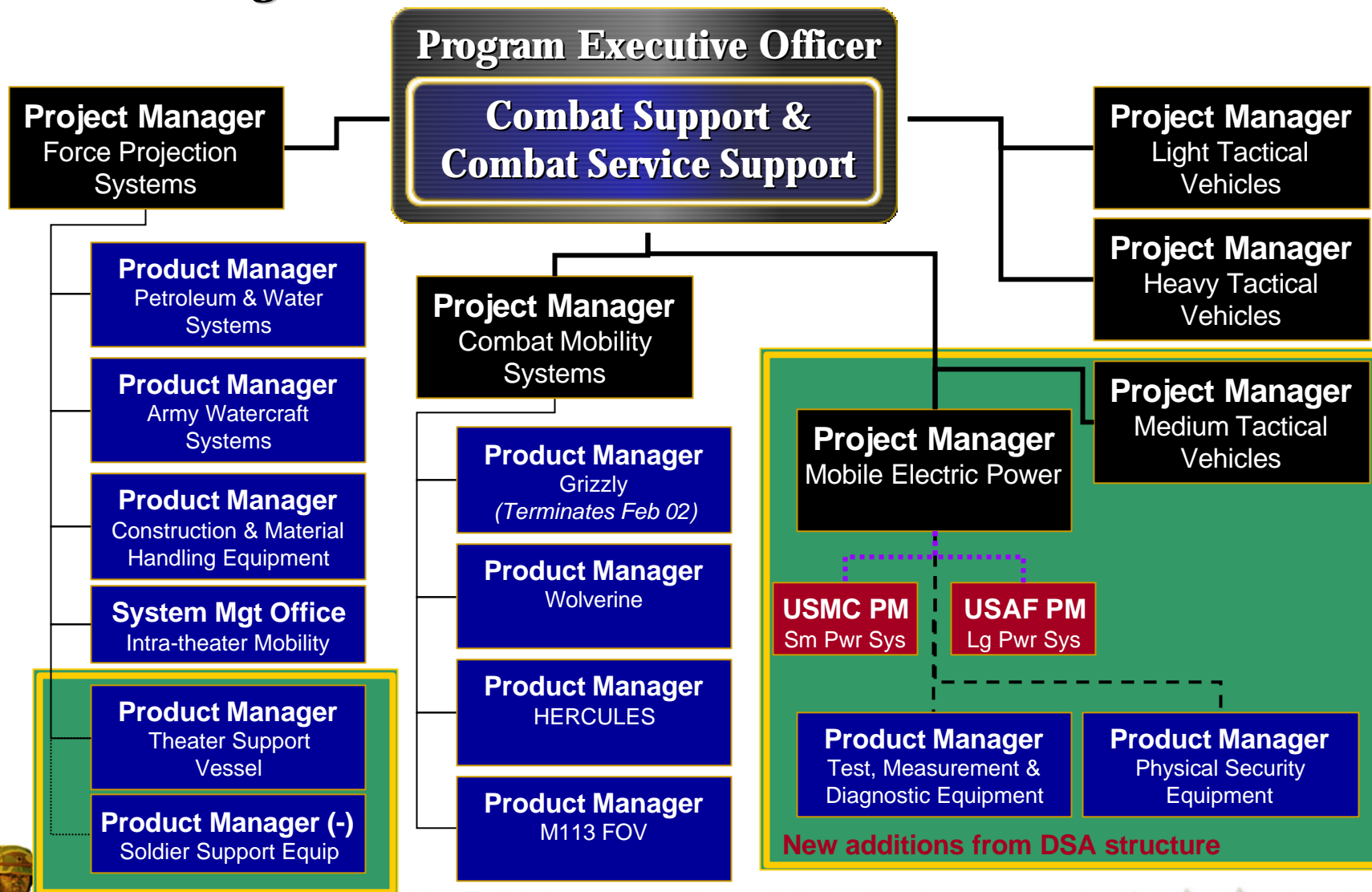
29 January 2002

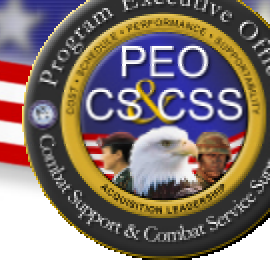


Acquisition Excellence



Initial Reorganization (Oct 01)





Reorganization Objective

FY05

Program Executive Officer

**Combat Support &
Combat Service Support**

Project Manager
Force Projection
Systems

Product Manager
Petroleum & Water
Systems

Product Manager
Theater Support
Vessel

Product Manager
Army Watercraft
Systems

Product Manager
Force Sustainment
Systems

Product Manager
Sets, Kits, Outfits, &
Tools

Project Manager
Combat Mobility
Systems

Product Manager
Bridging Systems

Product Manager
Recovery Systems

Product Manager
Construction & Material
Handling Equipment

Project Manager
Measurement, Electric
Power, & Protection

Product Manager
Physical Security
Equipment

Product Manager
Test, Measurement &
Diagnostic Equipment

Product Manager
Mobile Electric Power
(ARMY)

PM (USAF)
Large Power Systems

PM (USMC)
Small Power Systems

Project Manager
Tactical Vehicles

Product Manager
Heavy Tactical
Vehicles

Product Manager
Medium Tactical
Vehicles

Product Manager
Light Tactical
Vehicles

Product Manager
Trailers

Program Executive Office for Combat Support & Combat Service Support

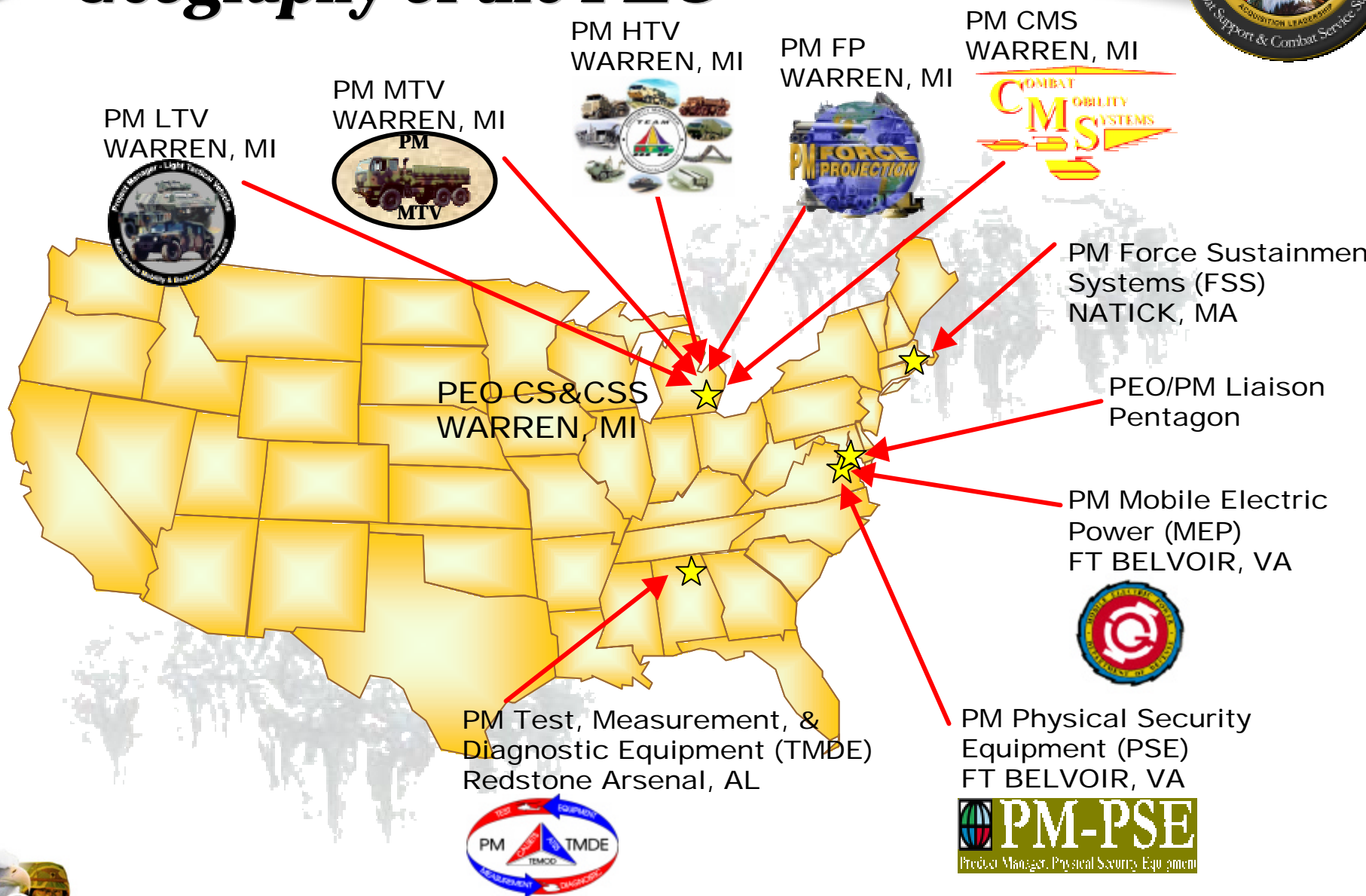


Acquisition Excellence



Geography of the PEO

Combat Support & Combat Service Support



Acquisition Excellence



Light Trucks and Trailers

PM Light Tactical Vehicles



M998 Cargo/
Troop Carrier



M1097A2 Heavy
Variant



M1113
Expanded Capacity
Vehicle



M1037 Shelter
Carrier

Multiservice Mobility & Backbone of the Force



M1025 Armament
Carrier



M1114
Up-Armored HMMWV



M1117
Armored Security Vehicle



M939 Series
Safety Mods



M966 TOW
Carrier



M996 2-Litter
Ambulance



M105A3 1.5 Ton Cargo,
M103A3 Chassis Trailers



M1022A1
7.5 Ton Dolly Set



XM1112, 400 Gallon
Water Trailer



M997 4-Litter Ambulance



M1101/M1102 High
Mobility Trailer (HMT)



M149, M116A3 Chassis,
M101A3 3/4 Ton Trailers



Containerized Kitchen Trailer



M200A1, 2.5 Ton
Chassis Trailer



M1061A1/M1073 5 T
Flatbed Trailer





Family of Medium Tactical Vehicles

PM Medium Tactical Vehicles

Trucks Move the Army

- 15 Variants in 2 1/2 & 5-Ton Payload Class with Companion Trailers



MTV Cargo



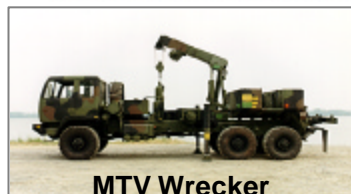
LMTV Cargo



LMTV Van



LWB MTV Cargo



MTV Wrecker



MTV Trailer

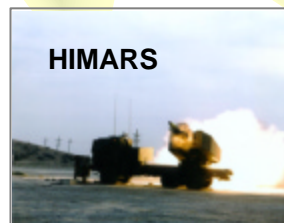
Unit Resupply
Ammunition Resupply



Transport of Equipment/Personnel
Weapons Platform



MTV LHS



HIMARS



MTV Dump



MTV Tractor



MTV Expansive Van



Heavy Trucks

PM Heavy Tactical Vehicles



PLS



HEMTT



HDSB



FRS



CROP

CHU



HET



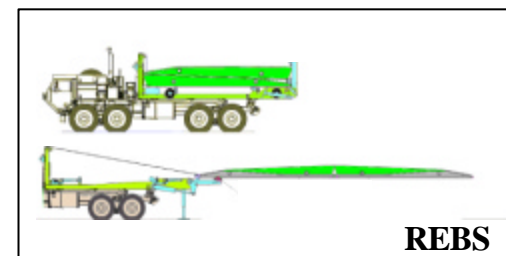
HEMTT -LHS



IRB



CBT



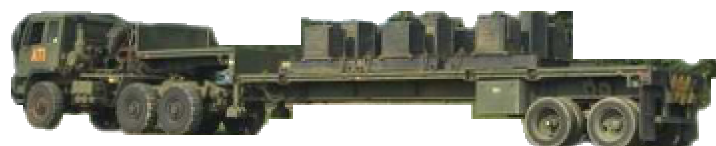
REBS





Intra-Theater Mobility Systems

PM Force Projection



M871A3 22.5 TON FLATBED TRAILER



**SELF-LOAD/OFF-LOAD TRAILER
(SLOT)**



**M917A2 20 TON
DUMP TRUCK**



**M878A2
YARD
TRACTOR**



**M916A3 LET
TRACTOR**



**M915A3/A4 LINE
HAUL TRACTOR**



**M870A3 40 TON
TRAILER**



FIFTH WHEEL TOWING DEVICE



**M967A2/M969A3 5000
GALLON TANKER**



Combat Support & Combat Service Support

Single Project Manager for Tactical Vehicles

IMSMO
FY02

Medium
Tactical
Vehicles

FY03

Heavy
Tactical
Vehicles

FY03

Light
Tactical
Vehicles

FY04

Trailers

FY02

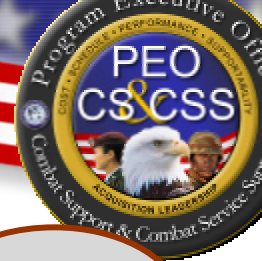
FY 05
Objective

PM
Tactical
Vehicles

PM LTV	PM MTV	PM HTV	PM TLR
-----------	-----------	-----------	-----------



Acquisition Excellence



Supporting Army Transformation

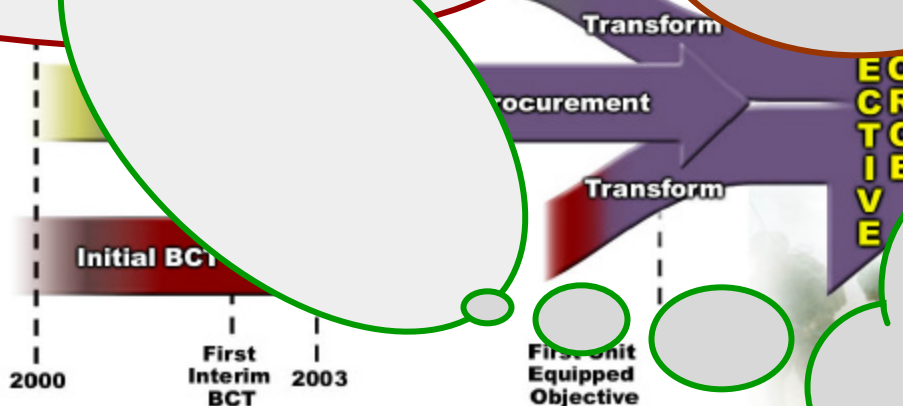
Legacy & Legacy to Objective

Program Executive Office
Combat Support & Combat Service Support

- Recapitalize Selected Vehicles
 - HEMTT
 - HMMWV
- M939 5-Ton Stabilization
- Line Haul Tractor Improvements
- M870 Equipment Trailer Reconfiguration
- M871 Semi-trailer Reconfiguration (FMTV)

Objective Force

Interim Force



New Fieldings

- Family of MTV
- Armored Security Vehicle
- Up-Armored HMMWV
- High Mobility Trailer
- Self-Load/Off Load Trailer
- Forward Repair System
- PLS Mission Modules



Acquisition Excellence



HEMTT Recapitalization

VCSA Decision

New Production 1485

Full Recap (Upgrade) 2783 in POM; 2840 in EPP

Justification:

- Fills HEMTT LHS in IBCT/4ID/1CD/3ID
- 432 HEMTT for PATRIOT in POM & 504 HEMTT for PATRIOT in EPP
- Full Recap - 1 PATRIOT BN per year FY02-07, remaining 6 Bns in EPP
- Unit Set Fielding of IBCTs & PATRIOT
- 4265 Trucks get improved IETM/diagnostics capability
- 969 additional HEMTT Cargo/Tanker/Wreckers for distribution to high priority units
- 539 HEMTT Cargo/Tankers/Wreckers for 18th ABN Corps
- Pure Fleet for IBCT, CATK
- Improves OR Rates
- EPP decision in FY06



ESP & New Production –
Under Heavy Family Contract
OMA Rebuild –
50/50 Industry/Depot Partnership

RECAP QUANTITIES

CATK Corps: 1,980 18TH ABN: 539 IBCT: 284 PATRIOT: 936 AC/RC: 969



HMMWV Recapitalization

VCSA Decision

New Production 31,279 thru FY16

(17,017 in FY02-07)

Focused RECAP 4372 in FY04-07; **RECAP** not done via **Unit Set Fielding (USF)**

Justification:

- Starts recap program
- Supports interchange FY04-07 / Up-armor needs
- Provides newest vehicles to first-to-fight forces only
- Partially stabilizes O&S cost in selected units
- Modernization burden placed on units across the fleet, including ARNG & USAR

**Industry/Depot Competition
on RECAP Vehicles**



"Make or Buy" Analysis – Ongoing
Recap Cost Limit Imposed – \$25,000

RECAP QUANTITIES

Counterattack Corps: 0

IBCT: 0

AC: 0

RC: 0

Other: 0





Combat Support & Combat Service Support

FMTV



SYSTEM CHARACTERISTICS

- 15 Variants in 2 1/2 & 5 Ton Tactical Weight Class
- 80% Commonality Between Vehicle Chassis
- Reduces Parts & Service Support Requirements
- A0 and A1 Share Same Basic Capabilities
- Strategically Responsive
- All Terrain Operation - Paved Thru X-Country
- All Weather Operation - +120° F Thru -50° F
- Three Man, Cab Over Design, Diesel Powered, Automatic Trans, All Wheel Drive w/CTIS
- Three Vehicle Variants & Both Trailers Models Airdrop Capable

PROGRAM HIGHLIGHTS

- AAO 83,170 Trucks and 10,000 Trailers
- ACAT1C Program (\$2.6 B in 04-08 POM)
- Executing Second Multiyear Contract with Stewart and Stevenson for A1 Trucks and Trailers
- Fielding A1s at 5 Major Locations
- Expanded Application of FMTV Platform to Support Army Emerging Requirements - HIMARS, LHS, TADS, CAMEL & Patriot Recap
- Working with NAC on 21st Century FTTS Requirements

DELIVERING THE ARMY'S TRANSFORMATION

CAPABLE	Multi-Mission / Multi-Purpose
RELIABLE	Ultra-Reliability / 97%+ OR Rate
MAINTAINABLE	State-of-Art Diagnostics
TRANSPORTABLE	Tactical / Strategic Deployability





FMTV RDA Initiatives

BUILDING TOWARD the FUTURE

IMPROVED C4I

- Driver Tech Flat Panel Display / Onboard Computer / Prognostics / Diagnostic
- Movement Tracking System
- GPS
- Collision Avoidance

IMPROVED SURVIVABILITY

- 7.62 Ball Protection Rapid Reaction Kit-Short Term
- Ballistic / Mine Blast Protection - Long Term

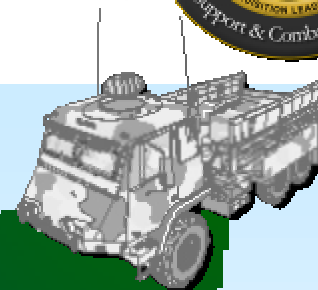
IMPROVED MOBILITY & LOAD CARRYING

- Vehicular Side Slope Awareness
- Troop Ramp
- Infrared Night Vision Driver's Aid
- Arvin Meritor Independent Suspension & Disk Brake System
- 5-Ton ➡ 8-Ton Capacity Improvement

MAJOR STUDY

- Georgia Tech Institute Prognostics/Diagnostics: In Progress

HORIZONTAL
TECHNOLOGY
INTEGRATION



Continuous
Improvement of
FMTV

HYBRID ENGINE

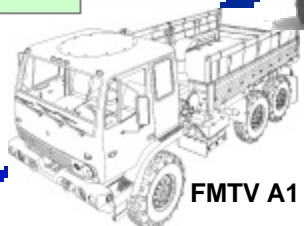
- Hybrid Electric - IR&D w / S&S
- Hybrid Electric - Effort w/NAC
- Hybrid Hydraulic - Monitoring Industry

NEW POWER

- 42 Volt Electrical System - Monitoring Industry
- Fuel Cells - Regenerative - Monitoring Industry
- Fuel Cells for Short Term Silent Watch
- NAC Parasitic Loss Reduction Initiative
- Fuel Economy Improvements
- Battery Health & Maintenance - Management System
- Ultra-capacitors - 4 Demo Vehicles, Ft. Carson



FMTV LHS



FMTV A1 CR



FMTV A1



LEGACY FLEET



Line Haul Tractor Improvements

Combat Support & Combat Service Support

M915A2

What we've done

AIR DRIER
ELECTRONIC ENGINE
RADIAL TIRES
ANTI-LOCK BRAKES
WATER-PROOF HARNESS
CONNECTORS
REUSABLE AIR CLEANER
CORROSION RESISTENT CAB

CONTINUOUS
IMPROVEMENT

M915A3
What we're doing

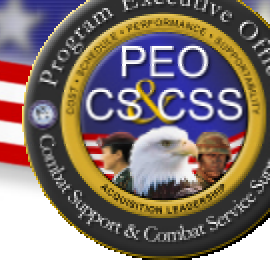
ELECTRONIC TRANSMISSION
AIR CONDITIONING
BATTERY CUT-OFF SWITCH
MATCHED AXLE RATIO
LIFETIME LUBRICATED SHAFTS
POSE TRIPLE LIPPED SEALS
COLLISION WARNING SYSTEM
TUF-TRAC SUSPENSION
HUB PILOTED WHEELS
LOW LUBRICATION FIFTH WHEEL
WEBASTO HEATER

M915A3 Rebuy
What we'll do next

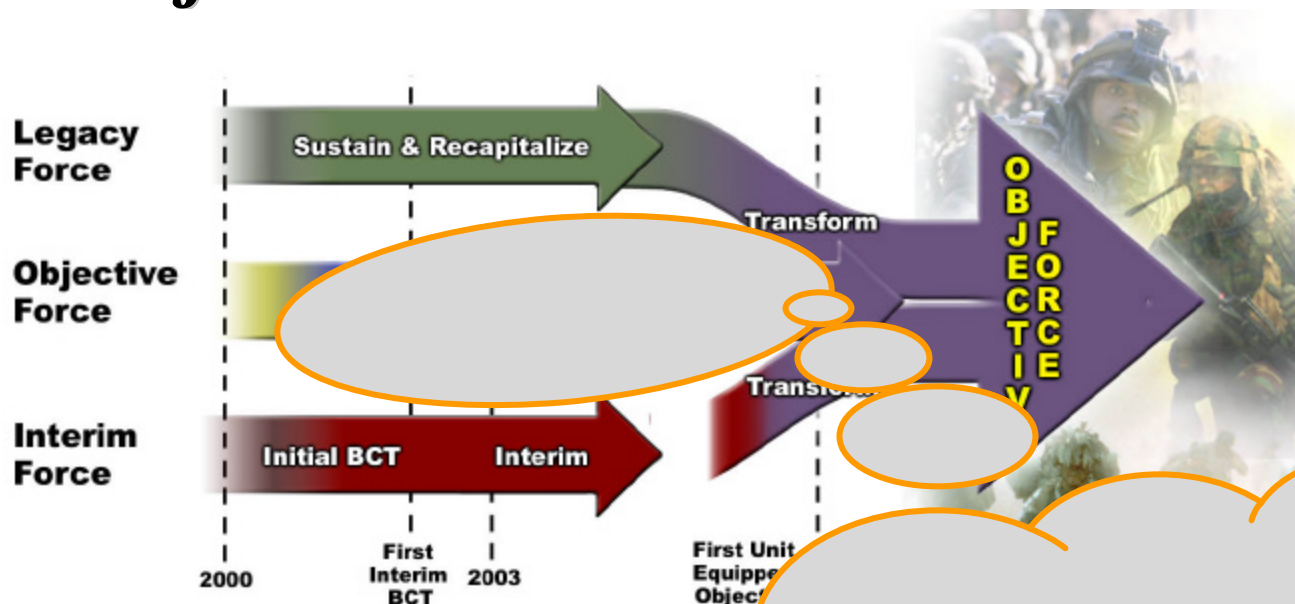
PRE-START LUBRICATION
REMOTE TIRE PRESSURE CHECKING
REUSABLE OIL FILTERS



Acquisition Excellence



Supporting Army Transformation Objective Force



Horizontal
Technology
Integration
(HTI)

- **Emerging Concepts/Ongoing Initiatives**
 - Enhance Deployment / Mobility Capabilities
 - Reduce Army & Theater Support Requirements
- **Hybrid Vehicles (HMMWV)**
- **Future Tactical Truck**



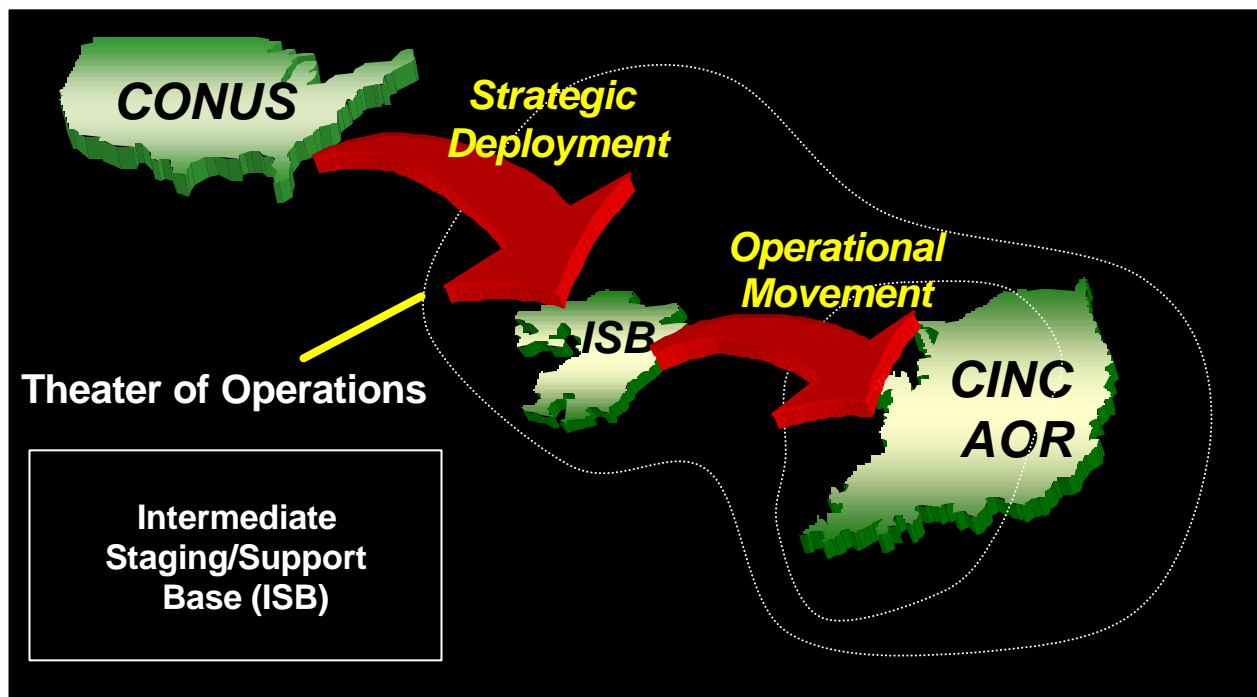
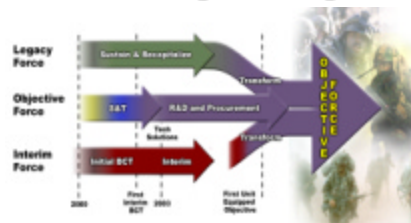


Program Executive Office
PEO CS&CSS
Combat Support & Combat Service Support

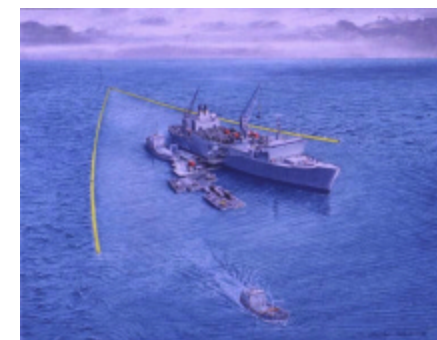
Emerging Concepts

Ongoing Initiatives

Enhanced Deployment / Mobility Capabilities



Shallow-Draft
High-Speed Sealift



Sea-State Reduction

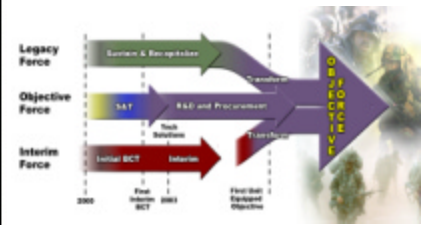




Combat Support & Combat Service Support

Emerging Concepts

Ongoing Initiatives



Reduced Army & Theater Support Requirements

Palletized Loading System



Movement Tracking System



Load Handling Systems



Forward Repair System-Heavy



Explore Advanced Technology

Integrate Multi-Capable Platforms

Embedded Diagnostics & Prognostics



Advanced Robotics



Future Tactical Trucks

Hybrid Electric Systems

Horizontal Technology Integration

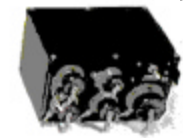
Advanced Crew Stations



Integrated C4

Embedded Training

Situational Awareness





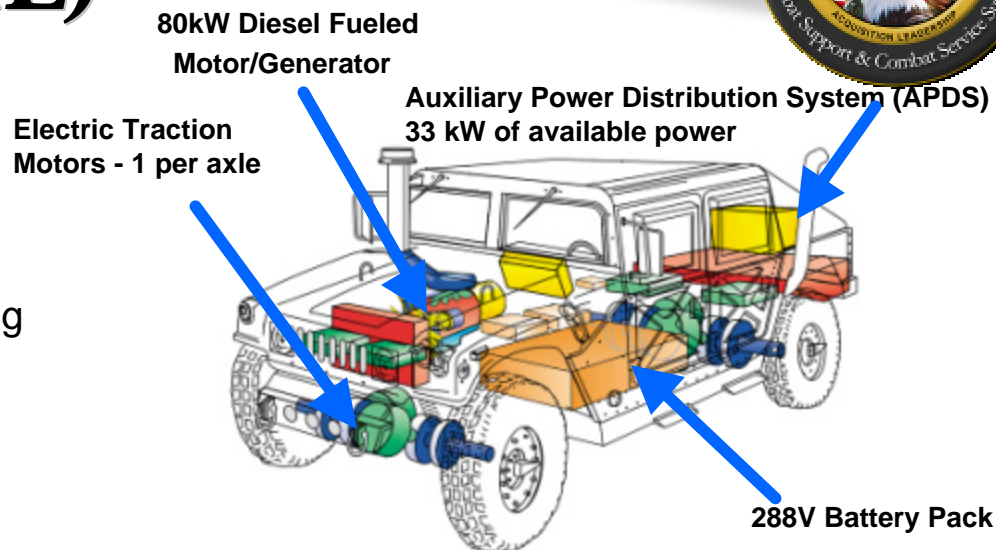
Hybrid Electric (HE) HMMWV Kit

Description

- ◆ Replaces the conventional HMMWV drive train with a Hybrid drive train while retaining all of the capabilities of the standard HMMWV
- ◆ Fuel consumption: 30-50% decrease
- ◆ Lowered thermal / acoustic signature
- ◆ Offers a quiet, mobile platform for silent watch, reconnaissance missions
- ◆ Capable of providing approximately 30 kW of continuous power
- ◆ All electric or hybrid operation
- ◆ Adaptable to robotic operation
- ◆ Multi-phase mobile power (AC/DC)

Key Requirements

- ◆ Intended to eliminate HMMWV-towed generators for systems such as THAAD, Sentinel, Striker, LOSAT, Patriot



Acquisition Requirements

- ◆ Contract type: CPFF
- ◆ Date awarded: 3 May 01
- ◆ Prime contractor: AM General Corp.
- ◆ Major subcontractor: PEI Electronics

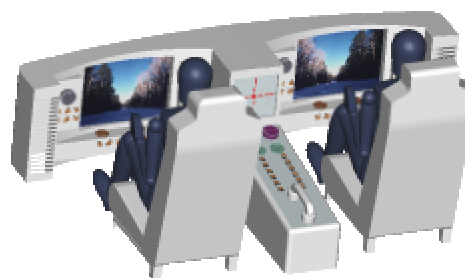
Program Status

- ◆ Production kit to be available FY05
- ◆ Partnering with TARDEC/NAC
- ◆ 4 technology demonstrators on contract
- ◆ Limited Govt. test to commence May 02
- ◆ Up to 12 prototypes to be competitively awarded in FY03 for full Govt. test
- ◆ Next major milestone: PEO IPR Jun 02



Future Tactical Truck System

- ◆ An Objective Force Enabler
- ◆ Embedded Diagnostics & Prognostics
 - Digitally linked - Automated Information Technologies
 - Improved Reliability through Improved Maintenance process
 - Monitored Vehicle Health Status
- ◆ Advanced Crew Station
- ◆ Modular Cabs
 - Ballistic Protection
 - Logistics Supportability
- ◆ Optimized Systems
 - Suspension
 - Weight/Load Distribution





Good Things to Report

- ◆ Continued Support on Consolidating Long Term Contract Requirements
- ◆ CSS Support to IBCT and FDD/FDC Has Been Excellent - Importance of Tactical Vehicle Logistics Enablers Reemphasized
- ◆ Multi-use Modules (PLS Flat-racks)
 - Reduced MHE needs
 - Reduced Manpower/Soldier Requirements for Transport
- ◆ Partnering with Industry
 - 21st Century Truck -- Leveraging Commercial Technologies
- ◆ Consolidation of Truck/Trailer Project Management





Challenges for Industry

What You Can Do For Us?

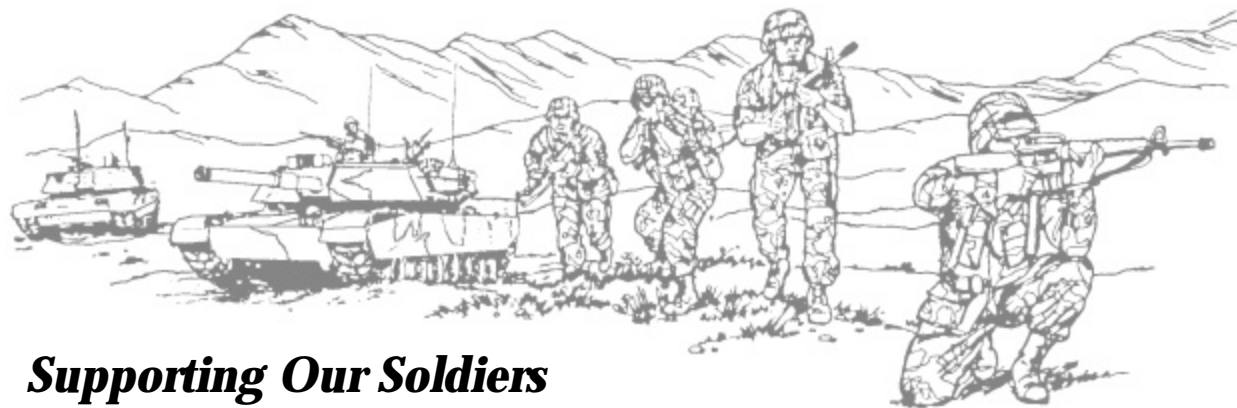
- ◆ Structure Meaningful O&S Cost Reduction Incentives Into Our Major Vehicle Contracts
- ◆ Jointly Develop Logistics Enablers for Objective Force
- ◆ Innovative Ideas
 - Bring Good Commercial Practices to the Army
 - Leasing
 - Parts Supply
 - Improve Fuel Economy
 - Integrate/Embed Diagnostics & Prognostics
 - Improve Crew Survivability
- ◆ Capable/Reliable/Maintainable/Deployable Systems

**Reduce
the
Logistics
Footprint**



Summary

- ◆ PEO CS&CSS – Organizing to Support Army Transformation
 - Total Life Cycle Management
 - Common Management of Vehicle Fleets
 - Technology Integration
- ◆ Build a Better Partnership – PEO, AMC, TRADOC, & INDUSTRY
- ◆ Provide the Platforms to Support and Sustain a Lighter, Leaner *Objective Force*



Supporting Our Soldiers

Acquisition Excellence